a second support member attached to and projecting from said proximal end of said shaft;

camera mounting means pivotally attached to said **first** support member **outside of said shaft**;

a video camera carried by said camera mounting means; **[**and**]**

operating means for pivoting said camera mounting means relative to said support member so as to alter the viewing angle of said camera, said operating means comprising a flexible cable having first and second strands extending movably within said passageway, said first and second strands being **[**coupled**]** **attached** to said camera mounting means **outside of said shaft** so that exerting a pulling force on said first strand in a predetermined direction will cause said camera mounting means to pivot in a first direction and exerting a pulling force on said second strand in a predetermined direction will cause said camera mounting means to pivot in a second direction opposite to said first direction, said operating means also including means **carried by said second support member** for selectively exerting a pulling force on said first and second strands whereby to cause pivotal movement of said camera mounting means**[**.**]** **and**

a camera cable connected to said camera for carrying video image signals from said camera to apparatus for processing said signals and generating a video display of the image seen by the camera.

(Twice amended) An instrument according to claim **[**3**]** **1** wherein said camera cable also comprises means for transmitting light to an object viewed by said camera.

(Twice Amended) An instrument for viewing a surgical site comprising:

a **malleable** shaft having proximal and distal ends;

a first support member attached to [one of] said [proximal and] distal [ends] **end** of said shaft;

camera mounting means [pivotally attached to] **carried by** said **first** support member**, said camera mounting means comprising an axle rotatably mounted to said first support member**;

a video camera **releasably** carried by said camera mounting means;

B3 conclude

a second support member coupled to [the other of] said proximal [and distal ends] **end** of said shaft; and

operating means for pivoting said camera mounting means relative to said **first** support member so as to alter the viewing angle of said camera,

said operating means comprising an actuating [means carried by] **member rotatably mounted to** said second support member and **a** flexible cable [means] **having first and second strands that extend within said shaft and are attached to said axle** [connecting said camera mounting means] and said actuating [means] **member, whereby rotational movement of said actuating member will cause a pulling force to be exerted on said first strand or said second strand according to the direction of rotation of said actuating member, and said camera mounting means is caused to rotate in a first direction in response to the pulling force exerted on said first strand and in a second opposite direction in response to the pulling force exerted on said second strand**.

4
~~11~~. **(Twice Amended)** An instrument [according to claim 1 wherein] **for viewing a surgical site comprising:**

B4

a shaft having proximal and distal ends and an internal passageway, said shaft [is] **being** malleable in the sense that it is shape retentive with respect to its lengthwise configuration until it is bent to a new shape, whereby said shaft

may be manually reformed into a selected lengthwise configuration for access to a viewing site and is adapted to remain in such selected lengthwise configuration until it is manually moved to another configuration;

a support member attached to one of said proximal and distal ends of said shaft;

camera mounting means pivotally attached to said support member;

a video camera carried by said camera mounting means; and

operating means for pivoting said camera mounting means relative to said support member so as to alter the viewing angle of said camera, said operating means comprising a flexible cable having first and second strands extending movably within said passageway, said first and second strands being coupled to said camera mounting means so that exerting a pulling force on said first strand in a predetermined direction will cause said camera mounting means to pivot in a first direction and exerting a pulling force on said second strand in a predetermined direction will cause said camera mounting means to pivot in a second direction opposite to said first direction, said operating means also including means for selectively exerting a pulling force on said first and second strands whereby to cause pivotal movement of said camera mounting means,

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13
~~20.~~ **(Twice Amended)** An endoscope comprising:

a video camera;

a shaft having proximal and distal ends;

a support member attached to said distal end of said shaft;

a camera **[**support**]** **carrier** with said camera releasably attached to said camera **[**support**]** **carrier**, said camera **[**support**]** **carrier** being pivotally attached

to said [shaft] **support member** by a first pivot shaft that is rotatably coupled to said [distal end of said shaft] **support member**; and

camera-pivoting means for pivoting said camera [support] **carrier** so as to alter the viewing angle of said camera, said camera-pivoting means comprising a second pivot shaft that is rotatably attached to said proximal end of said shaft, means for rotating said second pivot shaft, and a motion translating means coupled to said first and second pivot shafts for causing rotational movement of said first pivot shaft in response to and in synchronism with rotational movement of said second pivot shaft, said motion translating means comprising a flexible operating cable that extends through at least one lumen in said shaft [between] **and embraces and is pinned to** said first and second pivot shafts.

~~23.~~ **(Twice Amended)** An endoscope according to claim [22] ~~20~~ further including a first guide member **carried by said support member and** disposed adjacent to said first pivot shaft, and further wherein said operating cable is arranged in a figure 8 configuration about said first pivot shaft and said guide member.

~~24.~~ **(Twice Amended)** An endoscope according to claim ~~23~~ further including **a second support member attached to said proximal end of said shaft and** a second guide member **carried by said second support member and** disposed adjacent to said second pivot shaft, and further wherein said operating cable is arranged in a figure 8 configuration about said second guide member and said second pivot shaft.

~~25.~~ **(Twice Amended)** An endoscope according to claim [22] ~~20~~ further including manually operable means for rotating said second pivot shaft clockwise or counterclockwise.

17 13

~~26.~~ **(Twice Amended)** An endoscope according to claim [21] ~~20~~ wherein said operating cable makes more than one turn about at least one of said pivot shafts.

18

~~27.~~ **(Twice Amended)** An instrument comprising:

a shaft having first and second opposite ends and an internal passageway extending between said first and second ends;

first and second support means attached to **and projecting from** said first and second ends respectively of said shaft;

first and second axles **releasably** connected to said first and second support means, said axles extending transversely to the longitudinal axis of said shaft and being rotatable on their own axes relative to said support means**, at least said first axle being located outside of said shaft**;

an imaging device carrier attached to said first axle so as to rotate therewith;

means attached to said second axle for rotating said second axle on its own axis; and

a loop of a flexible, stretch-resistant operating cable extending about and between said first and second axles, **with portions of said cable extending within said passageway,** said loop being movable in response to rotation of said [first] **second** axle and **being** capable of causing said first axle to rotate in [synchronism with] **response to rotation of** said second axle**, said cable being under tension, and said first and second axles are releasably maintained in connection with said first and second support means respectively by a restraining force exerted thereon by said cable as a result of said tension.**

19 18
B7 ~~29.~~ **(Twice Amended)** An **instrument** according to claim ~~27~~ wherein said second support means is slidable lengthwise **[**of**]** **relative to** said shaft, and further including spring means urging said second support means in a direction to maintain tension in said cable.

20 19
~~31.~~ **(Twice Amended)** An instrument according to claim **[**30**]** ~~29~~ wherein said cable undergoes a figure 8 routing at each of said first and second axles.

B8 21 20
~~32.~~ **(Twice Amended)** An instrument according to claim **[**30**]** ~~31~~ wherein said shaft has at last one internal passageway extending between said first and second ends thereof, and further wherein said cable passes through said at least one internal passageway between said first and second axles.

23 18
~~34.~~ **(Amended)** An **[**surgical apparatus**]** **instrument** according to claim **[**33**]** ~~27~~
B9 wherein said cable undergoes a figure 8 routing at each of said first and second axles.

PLEASE ADD THE FOLLOWING NEW CLAIMS:

22 19
~~36.~~ An instrument according to claim ~~29~~ wherein said shaft said shaft is malleable in the sense that it is shape retentive with respect to its lengthwise configuration until it is bent to a new shape, whereby said shaft may be manually formed into a selected lengthwise configuration and is adapted to remain in such selected lengthwise configuration until it is manually reformed to another configuration.

B10 24
~~37.~~ An instrument comprising:

a shaft having proximal and distal ends;

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first and second support members attached to and projecting away from said distal and proximal ends respectively of said shaft;

camera mounting means rotatably mounted to said first support member, said camera mounting means comprising a supporting axle that is rotatably attached to said first support member and a pair of mutually spaced resilient side walls for embracing and releasably gripping a video camera;

a video camera comprising a housing containing (a) an optical system for capturing optical images of objects and (b) electronic imaging means for producing video image signals representative of the optical images captured by said optical system, said camera also comprising a cable attached to said housing and coupled to said electronic imaging means for carrying said video image signals to apparatus exterior of said instrument for processing said signals and generating a video display of the optical images captured by said optical system, and said housing being disposed between and gripped by said resilient side walls and all of said cable being disposed outside of said shaft; and

operating means for rotating said camera mounting means relative to said first support member so as to alter the viewing angle of said camera, said operating means comprising a flexible cable having first and second strands extending movably within said shaft, said first and second strands being coupled to said axle so that exerting a pulling force on said first strand in a predetermined direction will cause said camera mounting means to rotate in a first direction and exerting a pulling force on said second strand in a predetermined direction will cause said camera mounting means to rotate in a second direction opposite to said first direction, said operating means also including force-applying means rotatably mounted to said second support member for selectively exerting a pulling force on said first strand or said second strand whereby to cause rotational movement of said camera mounting means in a first direction or a second opposite direction.

B/O cancelled 25

~~38.~~ An instrument according to claim ~~37~~ 24 wherein said camera mounting means and said force-applying means are releasably mounted to said first and second support means respectively.

REMARKS

A petition to extend the time for response to the Official Action of 18 February 1999 to 18 July 1999 has been filed contemporaneously with this amendment. **A copy of that petition is attached to this amendment.**

The outstanding objection to the drawings is acknowledged. Formal drawings complying with Patent Office rules will be submitted upon issuance of a Notice of Allowance.

As a result of this amendment, the claims now in the application are claims 1, 4, 7, 11-20, 23-27, 29, 31, 32, 34, and 36-38.

Claims 15-19 stand allowed. Claims 11-14 were objected to as depending from a rejected base claim (claim 1), but were indicated as relating to patentable subject matter.

Claim 11 has been rewritten in independent form so as to include the essential limitations of claim 1. Accordingly allowance of claims 11-14 is believed to be in order.

Applicants respectfully traverse the rejection of claims 1, 3, 4, 7, 20, 23-29, 31, 32 and 34 under 35 USC 103(a) as unpatentable over Terwilliger in view of Thompson alone, or over those references further in view of Komiya, and reconsideration of the Section 103 rejection is requested on the basis of the changes to those claims made by this amendment and the following arguments.

Terwilliger U.S. Patent No. 4,756,313 is relevant to the extent that it teaches movement of a scanning transducer device by means of a drive mean that uses